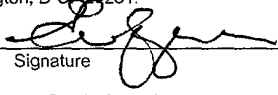


IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	Serial No:	To Be Assigned
Richard E. Smalley et al.	§		(division of application
	§		Serial No. 09/380,545)
For: CARBON FIBERS FORMED FROM	§		
SINGLE-WALL CARBON	§	Filed: CONCURRENTLY HEREWITH	
NANOTUBES	§		
	§	Group Art Unit: 1754 (anticipated)	
	§		
Atty Dkt: 11321-P012USD10	§	Prior Examiner: Stuart Henderson	
	§	703.308.2539	

U.S. Patent and Trademark Office
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December 28, 2001	
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	Gracie Segovia
	Printed Name

**PRELIMINARY AMENDMENT ACCOMPANYING REQUEST FOR FILING
 DIVISIONAL APPLICATION UNDER 37 C.F.R. § 1.53(b)**

Sir:

This paper accompanies a Request for Filing Divisional Application Under 37 C.F.R. § 1.53(b) and associated filing fee therefor ("the Request"). If the fee payment is missing or insufficient in amount, or if any other fees are determined to be due, the Assistant Commissioner, Commissioner, and/or the Director of the U.S. Patent & Trademark Office is/are hereby authorized to charge any such fees (or credit any overpayment) to Winstead Sechrest & Minick Deposit Account No. 23-2426, referencing matter number 11321-P012USD10.

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AMENDMENTS

In the Title

Please amend the title by replacing the present title with the following:

--METHOD FOR PRODUCING SELF-ASSEMBLED OBJECTS COMPRISING SINGLE-WALL CARBON NANOTUBES AND COMPOSITIONS THEREOF--

In the Abstract

Please amend the abstract by replacing the present abstract with the following:

--This invention relates generally to a method for producing self-assembled objects comprising single-wall carbon nanotubes (SWNTs) and compositions thereof. In one embodiment, the present invention involves a three-dimensional structure of derivatized single-wall nanotube molecules that spontaneously form. It includes several component molecule having multiple derivatives brought together to assemble into the three-dimensional structure. In another embodiment, objects may be obtained by bonding functionally-specific agents (FSAs) groups of nanotubes into geometric structures. The bond selectivity of FSAs allow selected nanotubes of a particular size or kind to assemble together and inhibit the assembling of unselected nanotubes that may also be present.--

In the Specification

Please amend the specification as noted on page 5, paragraph 11 of the Request by inserting before the first line of the specification the following:

--RELATED APPLICATIONS

This application is a division of co-pending prior U.S. patent application Serial No. 09/380,545, filed on September 3, 1999, entitled "CARBON FIBERS FORMED FROM SINGLE-WALL CARBON NANOTUBES," which is the 35 U.S.C. § 371 national application of International Application Number PCT/US98/04513 filed on March 6, 1998, which

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designated the United States, claiming priority to: provisional U.S. patent application Serial Number 60/067,325, filed on December 5, 1997; provisional U.S. patent application Serial Number 60/064,531, filed on November 5, 1997; provisional U.S. patent application Serial Number 60/063,675, filed on October 29, 1997; provisional U.S. patent application Serial Number 60/055,037, filed on August 8, 1997; provisional U.S. patent application Serial Number 60/047,854, filed on May 29, 1997; and provisional U.S. patent application Serial Number 60/040,152, filed on March 7, 1997. Each of the foregoing applications is commonly assigned to the assignee of the present invention and is hereby incorporated herein by reference in its entirety.

This application discloses subject matter related to the subject matter of U.S. patent application Serial Number 10/000,746, filed on November 30, 2001 in the name of Daniel T. Colbert et al., entitled "MACROSCOPICALLY MANIPULABLE NANOSCALE DEVICES MADE FROM NANOTUBE ASSEMBLIES," which application is commonly assigned to the assignee of the present invention.--

In the Claims

Please amend the claims as follows:

- A. Please cancel claims 1-140 and 153-162 without prejudice or disclaimer to the subject matter thereof.
- B. Please add the following new claims 163-194:
163. (New) A method for producing self-assembling component molecules comprising:
- (a) providing single-wall carbon nanotubes; and
 - (b) derivatizing at least one of the single-wall carbon nanotubes with a functionally-specific agent, wherein the functionally-specific agent has an attraction for at least one other chemical species.
164. A method for producing self-assembled structures comprising:
- (a) providing single-wall carbon nanotubes derivatized with at least one functionally-specific agent;

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- (b) exposing the derivatized nanotubes to another moiety for which the functionally-specific agent has an attraction; and
- (c) recovering assemblies formed by the derivatized nanotubes.

165. (New) The method of claim 164 further comprising removing at least one of the functionally-specific agents after the assemblies are formed.

166. (New) The method of claim 164 further comprising modifying the assemblies by a treatment selected from the group consisting of mechanical, chemical, electrical, optical, biological and combinations thereof.

167. (New) A structure formed by the process comprising:

- (a) providing single-wall carbon nanotubes derivatized with at least one functionally-specific agent;
- (b) exposing the derivatized nanotubes to another moiety for which the functionally-specific agent has an attraction; and
- (c) recovering assemblies formed by the derivatized nanotubes.

168. (New) The structure of claim 167 wherein the single-wall carbon nanotubes are derivatized with at least two different functionally-specific agents.

169. (New) The structure of claim 167 wherein the functionally-specific agents are derivatized on the ends of the single-wall carbon nanotubes.

170. (New) The structure of claim 167 wherein the structure is symmetrical.

171. (New) The structure of claim 167 wherein the structure is not symmetrical.

172. (New) The structure of claim 167 wherein the structure is three-dimensional.

173. (New) The structure of claim 167 wherein the structure is an electrical circuit.

174. (New) The structure of claim 167 wherein the structure is a diode junction.

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175. (New) The structure of claim 167 wherein the structure is a three-terminal device, and wherein the device is capable of controlling flow of electrical current.
176. (New) The structure of claim 167 wherein the structure is a capacitor.
177. (New) The structure of claim 176 wherein the capacitor is a memory element.
178. (New) The structure of claim 167 wherein the structure is an inductor.
179. (New) The structure of claim 167 wherein the structure is a pass element.
180. (New) The structure of claim 167 wherein the structure is a switch.
181. (New) The structure of claim 167 wherein the structure is an antenna.
182. (New) The structure of claim 167 wherein the structure is an antenna array.
183. (New) The structure of claim 167 wherein the structure is capable of interaction with an optical fiber.
184. (New) The structure of claim 167 wherein the structure comprises an interface between at least two entities.
185. (New) The structure of claim 184 wherein the interface communicates a property selected from the group consisting of stress, strain, electrical signals, electrical current, electromagnetic interaction and combinations thereof.
186. (New) The structure of claim 167 wherein the structure is a catalyst.
187. (New) The structure of claim 167 wherein the structure is a sorbent for specific chemicals.
188. (New) The structure of claim 167 wherein the structure is resistant to attack by specific chemicals.

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189. (New) The structure of claim 167 wherein the structure is resistant to corrosion.
190. (New) The structure of claim 167 wherein the structure is a pharmaceutical substance.
191. (New) The structure of claim 167 wherein the structure is an agent capable of enabling growth of biological systems.
192. (New) The structure of claim 167 wherein the structure is capable of interacting with biological systems.
193. (New) A device comprising a structure, wherein the structure is made by the process comprising:
- (a) providing single-wall carbon nanotubes derivatized with at least one functionally-specific agents;
 - (b) exposing the derivatized nanotubes to another moiety for which the functionally-specific agent has an attraction; and
 - (c) recovering assemblies formed by the derivatized nanotubes.
194. (New) The device of claim 193 wherein operation of the device comprises a method selected from the group consisting of action of electrolytes, passage of chemical agents, transfer of electronic charge, optical communication, passage of biological agents between the structure and other elements of the device and combinations thereof.

REMARKS

A. *Status of the Application.* Originally filed claims 141-152 remain in the application, and the other originally filed claims -- claims 1-140 and 153-162 -- are cancelled herein without prejudice or disclaimer to the subject matter thereof. Additionally, claims 163-194 have also been added herein. No new matter is added by the addition of these claims.

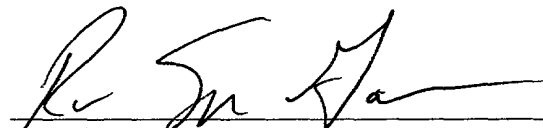
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CONCLUSION

It is believed that each of the claims now pending in the present application recites elements neither taught nor suggested by the prior art. Further, it is believed that the application as a whole is in proper form and condition for allowance. If the Examiner believes that the application may be placed in even better condition for allowance, he or she is invited to contact the undersigned at the telephone number noted below. Alternatively, or in addition, if the Examiner believes that an Examiner interview would be beneficial, the Examiner is invited to note that the undersigned has ready access to the videoconferencing facilities of the South Central Intellectual Property Partnership at Rice University in Houston, Texas. The inventors and the undersigned would welcome the opportunity to use those facilities to clarify any issues deemed to remain unresolved.

Respectfully submitted,

Date: December 28, 2001



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12/28/2001 - 11321-P012USD10